

Fujitsu begins field trial for AI-based train delay prediction

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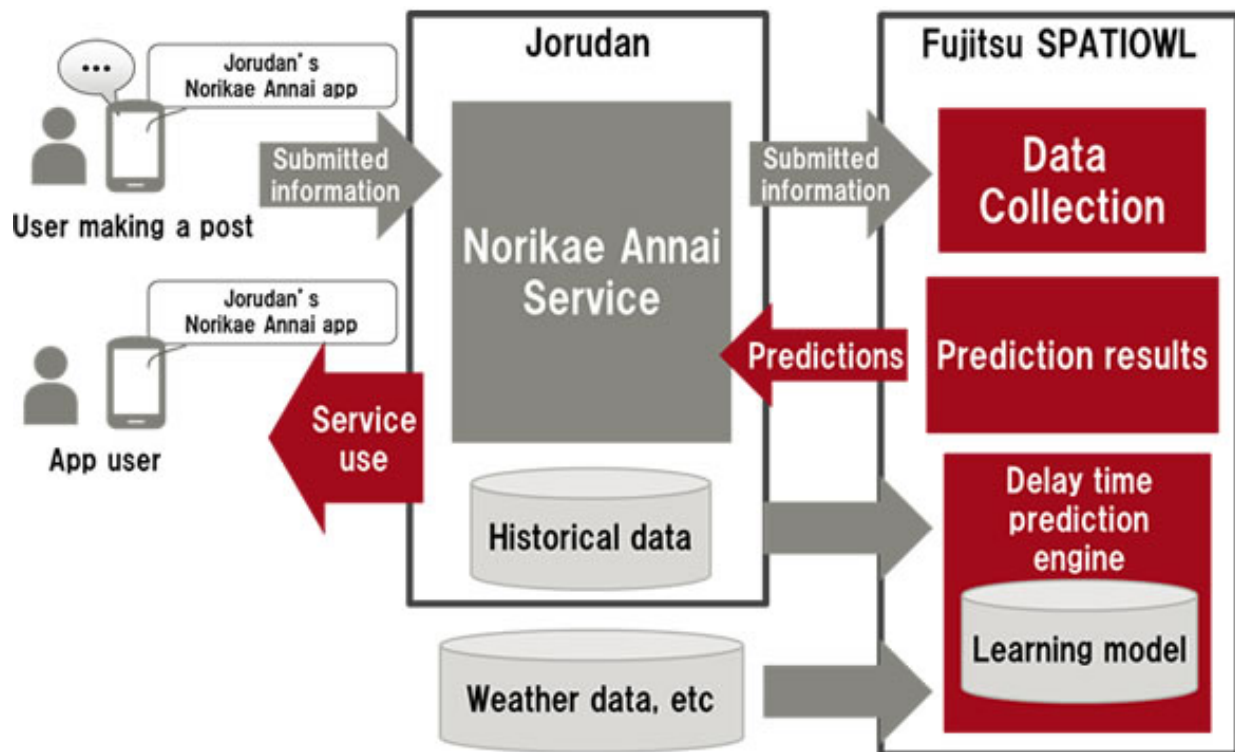


Figure 1: Summary of the field trial system. Credit: Fujitsu

Fujitsu Limited today announced that it has collaborated with Jorudan Co., Ltd. to add a train delay time prediction function, using AI machine learning technology, to Jorudan's "Norikae Annai," a service that provides public transportation route-planning information. It is also

carrying out a field trial of this service in support of public transportation users in their choice of routes across 138 train lines in the Kanto region, starting today until September.

This functionality is provided as the cloud service FUJITSU Intelligent Society Solution SPATIOWL, which embeds a delay time prediction engine - jointly developed with SRI International, one of the world's pre-eminent research organizations - into the Fujitsu AI technology, Human Centric AI Zinrai. Delay time predictions with enhanced accuracy are provided by having the service learn from data, such as that from railway operations and from past data about railway operations submitted by [users](#) to Jorudan's Norikae Annai service. This enables users of the Norikae Annai app to have more accurate and timely predictions about train delay times than before, making it useful for them to choose a route. Going forward, Fujitsu aims to verify the function's effectiveness through this field trial, and will look into expanding the service both inside and outside Japan.

Background

In Japan's urban rail system, trains are commonly delayed by sudden accidents or disasters. When this happens, alternative or replacement transportation is offered through other [public transport](#) methods, such as other train lines or buses. At the same time, this creates a problem for users when they need to think about how to most effectively reach their destination, as it is difficult to make the decision of whether to wait for the delayed train's service to resume, to change to another train line, or to pick another option. Despite lacking experience in rail operations, Fujitsu wanted to provide public transit-related business operators with information that supports users' choice of routes by learning from past delay information, and to verify its effectiveness in this field trial.

Trial Summary

Jorudan's Norikae Annai service is used by about 10 million people per month in Japan (according to a March 2016 report) to easily find routes, fares and estimated travel times for modes of public transportation.

Fujitsu will now provide predicted train delay times using AI technology for the Norikae Annai service and verify prediction effectiveness. Using machine learning technology and provided through SPATIOWL, the service is made to learn from past railway operations data and data submitted by users, and predicts changing delay times based on newly submitted data and current operational information. These predictions are displayed in the route search results in Jorudan's Norikae Annai app, supporting users' route selection when trains are delayed.

- Trial period: July 19, 2016 to end of September 2016(6)
- Goals: 1. Verify the effectiveness of support for users' choice of action 2. Verify the effectiveness of predictive functionality for train delay times
- Application: Norikae Annai app on Android
- Train lines covered in the trial: Lines through Tokyo, as well as Kanagawa, Saitama and Chiba prefectures (with some exceptions, 138 train lines in total)
- Features of information provided: Using AI Zinrai technology for increased accuracy of predictions based on machine learning using accumulated data.

Future Developments

Based on the results of the current [field trial](#), Fujitsu aims to continually improve prediction accuracy, and is planning to develop it as a new [service](#) for SPATIOWL.

Provided by Fujitsu

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